CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 87-036
NPDES NO. CA 0029181
WASTE DISCHARGE REQUIREMENTS FOR:

LITRONIX INCORPORATED;
MICREL, INC.;
PASTORIA LIMITED PARTNERSHIP
PASTORIA AVENUE FACILITY
SUNNYVALE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. Litronix Incorporated, by application dated December 12, 1986 has applied for issuance of waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES).

2. Litronix Incorporated, the former tenant of a semiconductor manufacturing facility at 639 N. Pastoria Avenue, Sunnyvale, Santa Clara County, Micrel Inc., the current tenant, and Pastoria Limited Partnership, the property owner, are hereinafter called he dischargers. The facility is located approximately 1/2 mile southwest of the intersection of Highway 101 and Mathilda Avenue.

3. Site investigations have found the soil and groundwater at the site to be contaminated with organic solvents including trichloroethylene, trichloroethane, tetrachloroethylene, dichloroethylene, dichloroethane, xylene, phenol, toluene, trichlorobenzene, and n-butyl acetate. It is believd that the pollution is a result of leakage from former on-site underground tanks and/or related piping.

4. The Board, on April 16, 1986, adopted Order No. 86-31 for the site. This Order named Micrel, Inc., the current tenant, Litronix, Inc., a former tenant, and Pastoria Limited Partnership, the property owner, as dischargers, and required definition of pollutant distribution and implementation of plans for pollutant plume containment.

5. By letter dated February 21, 1986, Litronix, Inc. offered to assume full responsibility for future investigation and remediation of chemicals of concern emanating from the 639 N. Pastoria Avenue facility.

6. As of November 1986, the pollutant plume extended vertically to a depth of 45 feet, and horizontally a distance of more than 1000 feet from the tank source area. The discharger seeks to cleanup and to prevent the further migration of pollutants by groundwater extraction and treatment.

7. Waste 001 consists of up to 50,000 gallons per day (gpd) of polluted groundwaters which will be treated by packed tower air stripping and carbon adsorption prior to discharge to the storm sewer tributary to Moffett Channel, the Guadalupe Slough, and South San Francisco Bay.

8. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for South San Francisco Bay, and contiguous surface and groundwater.

9. The beneficial uses of South San Francisco Bay include:

   - Contact and non-contact water recreation
   - Wildlife habitat
   - Preservation of rare and endangered species
   - Estuarine habitat
   - Fish spawning and migration
   - Industrial service supply
   - Shellfishing
   - Navigation
   - Ocean commercial and sport fishing

10. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, deadend slough, similar confined water, or any immediate tributary thereof."

11. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 10 above when it can be demonstrated that a net environmental benefit can be dreived as a result of the discharge.

12. Exceptions to the prohibitions referred to in Finding 10 are warranted because the discharge is an integral part of a program to cleanup contaminated groundwater and thereby produce an environmental benefit, and because receiving water concetrations are expected to be below levels that would effect beneficial uses. Should studies indicate chronic effects, not currently anticipated, the Board will review the requirements of this Order based upon section B.1.e.

13. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's groundwater extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.

14. Effluent limitations of this Order are based on the Basin Plan, State plans and policies, this Board's "Discharge of Polluted Groundwater to Surface Waters: Guidance Document, September 1985," and best engineering judgment.

15. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

16. The Board has notified the discharger and interested agencies and persons of its intent to issue waste dishcarge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

17. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. Waste 001 shall not contain constituents in excess of the following limits:

| Constituent | Units | Daily Maximum |
|---|---|---|
| 1,1,1 trichloroethane | mg/L | 0.005 |
| trichloroethylene | mg/L | 0.005 |
| 1,1 dichloroethane | mg/L | 0.005 |
| 1,2 dichloroethylene | mg/L | 0.005 |
| tetrachloroethylene | mg/L | 0.005 |
| chloroform | mg/L | 0.005 |
| benzene | mg/L | 0.005 |
| xylenes | mg/L | 0.005 |
| toluene | mg/L | 0.005 |
| ethyl benzene | mg/L | 0.005 |
| Trichlorobenzene | mg/L | 0.005 |
| 1,2 - dichlorobenzene | mg/L | 0.005 |
| 1,4 - dichlorobenzene | mg/L | 0.005 |
| Phenols (1) | mg/L | 0.005 |
| n-butyl Acetate | mg/L | 0.005 |
| Acetone | mg/L | 0.5 |
| Methy Ethyl Ketone | mg/L | 0.5 |
| Methyl Isobutyl Ketone | mg/L | 0.5 |

(1) Defined as those chemical compounds determined by EPA Method 604.

2. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

3. In any representative set of samples, the discharge of waste shall meet the following limit of quality.

TOXICITY: The survival of rainbow trout fishes in 96 hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

   a. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentration(s) than specified above, the discharge shall not cause further reduction in the concentration of dissolved oxygen.

   b. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more strigent standards.

C. Provisions

1. The discharger shall comply with all sections of this order immediately upon adoption.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. The discharger shall also notify the Regional Board if any activity has occured or will occur which would result in the dishcarge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

4. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986, except items A.10, B.2, B.3, C.8, and C.11.

5. This Order expires April 15, 1992. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

6. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Roger B. James, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on April 15, 1987.

ROGER B. JAMES
Executive Officer

Attachments:

Standard Provisions & Reporting Requirements, December 1986
Self-Monitoring Program
Site Map

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

R E V I S E D

SELF-MONITORING PROGRAM

FOR

LITRONIX, INC.; MICREL, INC.; PASTORIA LIMITED PARTNERSHIP; PASTORIA AVENUE FACILITY
SUNNYVALE, SANTA CLARA COUNTY

NPDES NO. CA0028878

ORDER NO. 87-036

CONSISTS OF

PART A Dated December 1986 and modified January 1987 (including Appendices A through E)

PART B Adopted: July 20, 1988

PART B

I. DESCRIPTION OF SAMPLING STATIONS

WASTE STREAM 001

A. INFLUENT

| Stations | Description |
|---|---|
| I-1 | At a point in the groundwater extraction/treatment system immediately prior to treatment. |

B. EFFLUENT

| Stations | |
|---|---|
| E-1 | At a point in the groundwater extraction/treatment system immediately following treatment. |

C. RECEIVING WATERS

| Stations | |
|---|---|
| C-1 | At a point in the Sunnyvale West Channel downstream of the storm drain outfall and south of Highway 101. |

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given in Table I.

III. MISCELLANEOUS REPORTING

If any chemical additives are proposed to be used in the operation of the treatment system it shall be reported 30 days prior to their use.

IV. MODIFICATIONS TO PART A

A. Deletions:

Delete Sections D2.e, D.2.g, D.3.b, E.1.e, E.1.f, E.3, and E.4.

G.4.e.1 Influent and Effluent Data Summary Reports shall be submitted only to the Regional Board Executive Officer, not to the EPA.

B. Modifications:

D.2.d If two consecutive samples monitored on a monthly basis in a 30 day period exceed the 0.005 mg/L effluent limit for each volatile organic compound by more than 0.005 mg/L, or exceed the pH or

toxicity effluent limit, the sampling frequency shall be increased to weekly until the additional sampling shows that the most recent three (3) days are in compliance.

G.2 Compliance with this section wil not be required, only if the effluent limitation of 0.005 mg/l instantaneous maximum for each volatile organic compound is not exceeded by more than 0.005 mg/l.

In accordance with this section, the discharger shall be required to accelerate his monitoring program to analyze the discharge at least once a week, not once a day.

G.4 Written reports under G.4 shall be filed each calender quarter, once in March, June, September, and December, by the 30 day of each of these months.

G.4.b The report format shall be prepared in a format acceptable to the Executive Officer. The example in Appendix A is provided as guidance.

G.4.d The report shall be prepared in a format acceptable to the Executive Officer. The example in Appendix B is provided as guidance.

G.4.e The report format shall be prepared in a format acceptable to the Executive Officer. NPDES Discharge Monitoring Report, EPA Form 3320-1, is provided as guidance.

G.5 By December 30 of each year, the discharger shall submit, in place of the quarterly report, an annual report to the Regional Board covering the previous year.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 87-036.

2. Was adopted by the Board on July 20, 1988.

3. May be reviewed at any time subsequent to the effective data upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executve Officer or Regional Board.

STEVEN R. RITCHIE
EXECUTIVE OFFICER

Attachment: Table I

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

| Sampling Station | I-1 | E-1 | C-1 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| TYPE OF SAMPLE | G | G | G | | | | | | | |
| Flow Rate (Gal/Day) | D | D | | | | | | | | |
| BOD, 5-day, 20°C, (mg/l) | | | | | | | | | | |
| pH (units) | | 2/M | 2/Y | | | | | | | |
| Dissolved Oxygen (mg/l and % Saturation) | | M | 2/Y | | | | | | | |
| Temperature (°C) | | M | 2/Y | | | | | | | |
| Total Suspended Solids (mg/l) | | | | | | | | | | |
| Fish Tox'y 96-hr. TL % Surv'l in undiluted waste | | 2/Y | | | | | | | | |
| Volatile Chlorinated Hydrocarbons (mg/l) (1) | M | M | 2/Y | | | | | | | |
| Aromatics (mg/l) | M | M | 2/Y | | | | | | | |
| Phenols (mg/l) (2) | M | M | 2/Y | | | | | | | |
| n-butyl Acetate (mg/l) | M | M | 2/Y | | | | | | | |
| Ketones (mg/l) (3) | M | M | 2/Y | | | | | | | |
| | | | | | | | | | | |

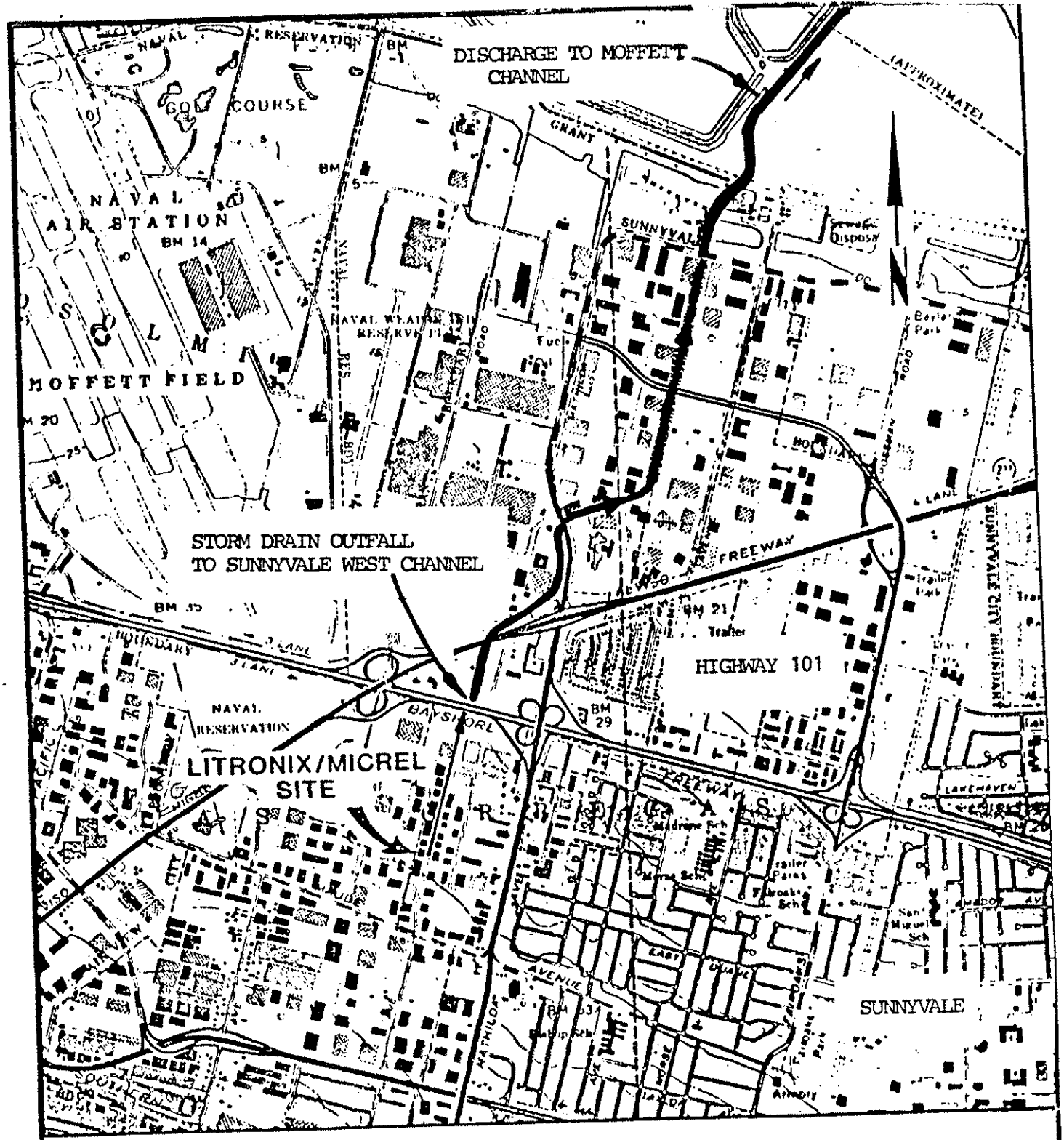
LEGEND FOR TABLE

G = Grab
D = Once each day
M = Once each month
2/M = Weekly for first 6 months of operation; reduced to twice a month there after.
2/Y = Once in March and once in Sept.

(1) Defined as 1,1,1 trichloroethane, trichloroethylene, 1,2 dichloroethylene, tetrachloroethylene, 1,1 dichloroethane, chloroform, trichlorobenzene, 1,2 - dichlorobenzene and 1,4-dichlorobenzene.

(2) Defined as those parameters determined by EPA Method 604.

(3) Defined as acetone, methyl ethyl ketone, and methyl-isobutyl ketone.




2000 FT

SCALE

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SITE LOCATION MAP
LITRONIX/MICREL
SUNNYVALE, SANTA CLARA CO.

| DRAWN BY: | DATE: 2/6/87 | DRWG NO. |
|---|---|---|